

A SIGNATURE PEDAGOGY FOR LEADERSHIP EDUCATION: PREPARING PRINCIPALS THROUGH PARTICIPATORY ACTION RESEARCH

Abstract

This study proposes participatory action research as a signature pedagogy for principal preparation programs. Signature pedagogies bring professional knowledge and core values together in distinctive teaching and learning arrangements. A rationale and learning results are presented that describe key components of action research intended to help principal candidates develop leadership abilities. In this study, 65 principal candidates from 56 schools developed action research projects to conceptually and practically connect professional development and school improvement planning. Learning outcomes are presented and analyzed. The article concludes with implications for action research as a signature pedagogy in principal preparation programs.

“How do you know when you know something? When you can produce what it is you claim you know” (Argyris, 1993, p. 3). This is a perennial challenge for educators: how do you know that students understand what is taught well-enough to apply their knowledge? When the students in question are the next generation of principals charged with realizing systemic educational reform, those who work in principal education meet the challenge by redoubling efforts to understand what graduate students know, do, and value as a result of the learning experiences we design for them.

While academic leadership preparation programs have taken the challenges of principal preparation seriously, the work of improving university-based programs continues even as the practical work of principals evolves (Björk, Kowalski, & Young, 2005; Murphy, 2005, 2006; Southern Regional Education Board, 2006). Contemporary principals must be able to accomplish more with less, demonstrating marked increases in student achievement under challenging conditions and with diminishing resources. To meet the demands, leaders in university-based principal preparation programs must join educators from other professions in thoughtfully developing “signature pedagogies” for the field (Shulman, 2005). In the case of school leadership, signature pedagogies must help principal candidates prepare for contexts of practice that may be significantly different than anything they have directly experienced. This article addresses one set of challenges in principal preparation by presenting a descriptive account of a Seminar on School Development that asks aspiring principals to tackle

the leadership tasks of appraising their local schools' capacity to connect professional development to strategies of systemic improvement using an action research approach.

A Framework for Signature Pedagogy in Principal Education

During the past decade scholars of principal preparation have advanced the argument for a transformative pedagogy/andragogy that strengthens the connections between leadership education, graduate student learning, and robust careers that make a difference (Brown, 2004, 2006; Browne-Ferrigno, 2003, 2007; Black & Murtadha, 2007; Bruner, Greenlee, & Hill, 2007). We support this call for reform and see action research as a teaching-learning strategy that sharpens the students' awareness of the gap between existing conditions in schools and prospects for significant improvement. In Kathleen Brown's (2006) terms, we seek to educate "a critically reflective administrator" with "the capacity for both critical inquiry and self-reflection" (p. 89). Linda Darling-Hammond (2006) studied similar strategies of active inquiry and reflection for exemplary teacher preparation programs in which student teachers conduct action research studies in classrooms and schools. We share her concern that an obsolete transmission model is inadequate for professional education.

In this article we demonstrate how pedagogy in a principal preparation program was developed to help principal candidates appreciate their own learning through reflective inquiry about the challenges of improvement in their local schools. This was done through the use of a signature pedagogy that integrated ideas about systemic school improvement with field work among fellow educators. We make the case for the development of a signature pedagogy, pedagogical content knowledge, and participatory action research that transforms a graduate seminar into an opportunity for an apprenticeship in school leadership (Shulman, 2004, 2005).

The ultimate goal of signature pedagogies in education across the professions is to develop *practical wisdom* in students before they begin practice. Practical wisdom is "a sense of what will 'work' and what will not. It is a capacity...for synthesis rather than analysis.... Above of it is an acute sense of what fits with what, what springs from what, what leads to what; how things vary to different observers, what effects such experience upon them may be; what the result is likely to be in concrete situations of interplay of human beings and impersonal forces" (Berlin, 1996, pp. 46-47). Signature pedagogies need to be understood in some detail if we are to design programs that move principal candidates to practical wisdom even where practice does not provide experiential bases for learning, and scholarship is used to address these experiential deficiencies and extend the working knowledge of the field (Hammersley, 2007; Hargreaves, 2007).

We propose a participatory action research approach as one such pedagogy intended to create the possibility that practical wisdom can

emerge from university-based coursework tied to students' own contexts of practice. The action research project in the Seminar on School Development is presented along with the results found in the field and their effects on the candidates' learning. The data that supports the learning of the students are presented and analyzed. We conclude by arguing for the inclusion of an action research strategy as one signature pedagogy for principal preparation programs.

The Continued Need for a Signature Pedagogy

In 1995 the University Council of Educational Administration (UCEA), at its national convention, held a plenum devoted to the idea of a signature pedagogy for educational leadership programs. "The executive committee asked one central question of Plenum representatives: Is there a common pedagogy that forges a connection between leadership-preparation program course work, practice, and policy making in the field.... In other words, should there be a signature pedagogy for educational leadership?" (Black & Murtadha, 2007, pp. 3–4). This question deserves continued attention as academic leaders, policy makers, and practitioners forge new directions for the preparation of principals and other educational leaders. Shulman (2005) coined the term and argued that signature pedagogies "are types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions. In these signature pedagogies, the novices are instructed in critical aspects of the three dimensions of professional work—to think, to perform, and to act with integrity"(p. 52).

With Shulman's view of signature pedagogy as a guide, we argue that there is an urgent need for a new way to educate principal candidates on the crucial tasks of educational leadership: Transforming ordinary schools into high performing learning communities. What is the signature pedagogy needed to train future principals who face the imperative to develop learning-centered schools? We respond to this question by describing the teaching-learning strategies of a Seminar on School Development.

Content Knowledge and Systemic School Improvement

This article borrows another insightful concept from Shulman: pedagogical content knowledge. Shulman (2004) defines pedagogical content knowledge as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (p. 92). Together, these two powerful concepts, signature pedagogy and pedagogical content knowledge, create a lens for reviewing university-based teaching and learning practices in leadership-preparation. They provide a guiding framework for designing the Seminar on School Development. The pedagogical content knowledge for the semi-

nar was constructed from a rich literature on the promising developments of learning-centered schools. This curricular content was integrated with specific instructional strategies that are derived from two related action research projects that examined critical issues of school improvement, described below.

The signature pedagogy of a given profession is closely related to the pedagogical content knowledge that professors bring to their classes and seminars. The curriculum content knowledge of the Seminar on School Development was grounded in the extensive research of the past three decades on the systemic improvement of learning-centered schools. Students in the seminar read a series of articles, essays, and books by research scholars concerned with successful and sustained school development (Bryk, Rollow, & Pinnell, 1996; Bryk & Schneider, 2002; Elmore, 2004, 2008; Fullan, Hill, & Crevola, 2006; Marzano, 2003; Newmann, King, & Youngs, 2000; Newmann, Smith, Allensworth, & Bryk, 2001; Sebring & Bryk, 2000; Stiggins, 2005). These researchers represent a new generation of scholars who have shaped a more sophisticated and nuanced understanding about school improvement as a complex learning-centered enterprise (Pacha & Curry, 2007). School leaders are expected to address an integrated set of critical tasks that include the following key components: enhancement of the technical core; coherent and embedded professional development; internal networks of collegial support; and external networks of support from parents and other stakeholders. These collaborative work commitments must also undergo continuous review as school leaders monitor outcomes and develop sustainable arrangements that assure ongoing adaptations (Elmore, 2004; Fullan, 2005; Garet, Porter, Desimone, Birman, & Yoon, 2001; Payne, 2009; Marzano, Waters, & McNulty, 2005).

The pedagogical strategies essential for meaningful teaching and learning of the core ideas of professional growth for principal candidates are necessarily authentic intellectual work for practitioners. The seminar was firmly committed to a wide array of active learning strategies for adults intended to use life experiences to critically engage students in the course content (Mezirow, 1997). These methods include thinking tasks such as writing critical essays on the literature; engaging in dialogue in the seminar and on-line; conducting web searches for the most current developments in school improvement, and conducting a field study (Kuhn, 2005; Brookfield, 1987). These tasks are designed to help principal candidates become reflective practitioners in their future role as school leaders (Schön, 1983, 1987).

Action Research: Connecting Rigor and Relevance

One of the most important signature pedagogies in the preparation of school leaders is the effective use of action research that allows students to explore the empirical realities of their workplace and to reflect

on these realities in light of current trends in the field and exemplary practices reported in the literature. The core ideas of action research have been developed by several generations of qualitative researchers who use their methods as a way to foster new opportunities for discovery and dialogue in an endless array of communities and organizations around the world (Reason & Bradbury, 1994; Hamilton, 1994; Whyte, 1991; Kemmis & McTaggart, 2005). Action research invites participants to become actively involved in studying their immediate social settings and reflecting on the meaning of their findings for the benefit of their own continuing participation in the group. Students are asked to engage in a fieldwork project that becomes praxis—practical, reflective, pragmatic action—directed toward crucial agendas of school development. According to Reason and Bradbury (1994), action research addresses the tough questions “of how to transform organizations and communities into collaborative, self reflective communities of inquiry” (p. 330). These questions are given center stage in the Seminar on School Development.

Participatory action research requires principal candidates to explore with rigor and depth the organizational features of each candidate’s school. Although graduate students think they are well informed about their own schools, in fact, in their busy lives as educators most have never had the opportunity to think critically and reflectively on topics of school development. Action research projects are designed to force the local educator out of conventional roles and daily habits to assume new roles as inquiring investigators expected to raise probing questions that go beyond the taken-for-granted routines of school life. Action research is not empirical scholarship in the positivistic tradition of many social scientists, but it is sufficiently systematic and rigorous to allow practitioners to examine credible clinical evidence that can be applied to many of the problem solving tasks facing local educators responding to the imperatives of school improvement (Schön, 1983, 1987).

For the vast majority of graduate students, the fieldwork project gave them their first opportunity to examine systematically deeply embedded institutional practices that are rarely questioned by teachers or administrators. The action research project is a vehicle to scrutinize what is actually happening in the school so that the graduate student sees the school in a new way. It is both a focused project on a specific topic and a holistic clinical case study of a school that has many components that are working together with varying degrees of interdependence. Graduate students see their school in context as a place for inquiry and dialogue among key actors who have invested their lives in their schools. Some of the best seminar projects were written by principal candidates who are teacher leaders serving on school improvement teams and professional development committees. The individual studies from contexts of practice help these students return to their schools with new understanding and insights about the current state of affairs in their schools and appropriate next steps for needed changes.

Seeing School Improvement and Professional Development with New Eyes

Students in the Seminar on Organizational Development conduct two interrelated studies of the school where they currently teach. The first study examines the School Improvement Plan (SIP) and the relationship between the formal claims of the plan and the actual activities of planning and action that may or may not have any impact on school improvements. For example, each SIP is examined for its capacity to develop and sustain teacher learning that would in turn yield greater student learning. Looking through the lens of a learning-centered school, most graduate students soon discover that the SIP fulfills the requirements for bureaucratic formalities as an espoused theory of improvement, but the actual theory-in-use is more ritualistic and fragmented in nature (Elmore, 2004). The first critical study allows the principal candidates to reflect on the challenging issues of school improvement that have been articulated in the scholarly literature and empirically tested in their local school. The SIP project also sets the stage for the next major investigation of professional development in the same school. New questions about school improvement are raised, but now the point of departure is the role of professional development as a lever for change.

The professional development project opens with the analytical study of seminal writings on professional development (Elmore, 2004; Hawley & Valli, 1999; Newmann, et. al., 2001). These readings help ground students in the complexities of systemic school improvement and the role professional development is expected to play in the advancement of greater organizational capacity for student achievement. The graduate students are asked to look at professional development as a highly complex phenomenon embedded in the school's organizational structures and culture. The conventional distinction found in the literature that contrasts the old and new paradigms of professional development is examined as a partial understanding of the challenges facing school leaders. We accept the conventional wisdom suggested by this distinction. Isolated and episodic training activities have limited value and the new paradigm of embedded and ongoing training is certainly a major step forward (Elmore, 2004; Garet, Porter, Desimone, Birman, Yoon, 2001; Hawley & Valli, 1999). But the issues are more complex than this simple dichotomy. The next step is to see schools as work settings for professional learning communities and resource exchange networks of support (Baker et al., 2007; DuFour & Eaker, 1998; McLaughlin & Talbert, 2006; Sarason, 1996; Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009; Wenger, McDermott, & Snyder, 2002). Professional work is fundamentally reorganized, and roles are changed, particularly the role of teachers who are now seen as collaborators and leaders who share responsibility for extending the school's learning capacity. The principal's role changes as well and in complex ways that generate a new sense of shared leadership and collaborative work for administrators and teachers.

In schools that develop features of a professional learning community, the agenda for the professional development program is focused, robust, and under continuous scrutiny (DuFour, Eaker, & DuFour, 2005).

To provide a guide for the action research project, students studied a descriptive model of professional development that was developed from an empirical study of 28 school-university professional development partnerships (Baker & Gardner, 2005; Baker et al., 2007). The descriptive guide, Structures of Training and Processes of Implementation (STPI) Model, is a fourfold typology constructed along two dimensions: (a) the structural design and (b) the implementation process. First, the structural dimension establishes whether the professional development activities are designed for teachers as solo practitioners or as members of collective units such as grade level teams, high school departments, or school-wide projects. Second, the process dimension establishes whether implementation of professional development activities is short-term training or long-term professional learning with ongoing commitments. These two dimensions are cross-tabulated to create four types of professional development.

The four types of professional development are analytical concepts, not normative prescriptions. There is no claim that one model is superior to another. Depending on the purpose of the professional development activity and the needs it is intended to serve, each of the four models might be considered more appropriate than others. Each model requires thoughtful reflection on critical assumptions that have a bearing on practices and outcomes. For example, despite the bad reputation of once-and-done professional development, it may be perfectly effective to have a one-time workshop on a new on-line recordkeeping application or on how and when to use a defibrillator. Thoughtful principals have to match the professional development design with intended results. The graduate students use the model to come to understand, however, that only by altering the fundamental roles and relationships in the school and making the focus on student learning ongoing and not episodic that the deeper strata of practice is changed in schools. Without these deeper changes, we would not expect to see learning successes extended to all students in robust and sustainable ways. This is the work the principal candidates must be ready to do. The Action Research on Professional Development project takes on this work within the seminar context.

Action Research on Professional Development in a Context of Practice

The Action Research Project on Professional Development is carried out in three steps. First, students are asked to conduct a thorough investigation of all professional development activities in their school during the past two years. They review documents (e.g., School Improvement Plans, Professional Development Plans, and Technology Plans) and consult

with the principal to compile a comprehensive inventory of professional development activities. Second, students use a packet of information containing the following: interview questions; the STPI Model of four types of professional development activities; an information gathering protocol; and Participant Consent Forms. Using the packet of materials, the principal candidates interview four educators from their district and school: the central office administrator responsible for professional development, the principal, and two teachers. The STPI Model is sent ahead to participants to study prior to the interview. Third, students analyze their findings and write a ten page paper that is expected to integrate ideas from their review of literature with findings from the field study. During the several weeks of the action research project, students share results from their field studies in the seminar. They also discuss the implications for systemic school improvement. This provides graduate students with opportunities to work through a deeper understanding of how their local leaders have designed and implemented professional development in their own schools.

Application of the STPI Model for describing variation among professional development activities is not simple and automatic. Students in the seminar discovered that the application of the model to the real life work of their schools and districts created a new awareness of disconnections between the model and various contradictory perceptions about professional development in their schools. They also gained new insights on the breadth of professional development activities that sometimes are beneficial to career development and student learning and that sometimes are distracting and wasteful. After students have collected their data, a compilation of findings is made in each quadrant of the STPI Model. The collective data from several schools is used to examine the range of professional development activities that could be adapted for various appropriate and useful purposes in the school's improvement agenda.

The action research project is a case of collaborative inquiry on two levels. First, the graduate students have a series of conversations with their fellow educators in their local settings. For most principal candidates it is the first time they have thought so deeply about the many challenges and contradictions that seem to surround the school's professional development program. On the second level, students share their findings and discuss implications for needed changes in the current system. They often discover the fact that other schools seem to be facing similar difficulties. On other occasions they discover schools that have made significant breakthroughs in using more focused professional development strategies to greater advantage for school improvement.

Methodology

The current investigation began in two prior studies that resulted in the development and testing of the STPI model. The original studies pro-

vided a data base to develop coding categories for the content analysis of the level of professional development in schools and the kind of learning experiences reported by principal candidates. The codes developed for this study follow guidelines developed by Miles and Huberman (1994). During the next three years, 65 principal candidates in five seminars conducted field studies of the professional development programs in their schools. The vast majority of these graduate students were classroom teachers taking the Seminar on School Development as part of their degree program and principal certification. The 65 candidates provided a broad distribution across the K–12 spectrum. Thirty-three graduate students were high school teachers, 16 were teaching at middle school, and 16 were elementary teachers. Most of the students planned to seek employment as principals or assistant principals during their careers. In ten cases, two students participated in the seminar from the same school. The result was 65 action research projects written by principal candidates from 56 schools.

Findings

When 65 action research assignments were submitted, the projects were analyzed from two distinct perspectives. First, they were examined as empirical evidence about the current state of professional development in the schools. What is the level of development in the schools that the students investigated in their field studies? The second perspective examined the quality of the students' learning experience. What did the students learn as a result of this complex project? Were the students able to apply core ideas in the scholarly literature to the practical realities they found in their local schools? Did the Action Research Project on Professional Development provide students with useful conceptual tools and research methods that allowed them to translate theory into action? These two perspectives provided two sets of findings: (a) evidence about current practices of professional development in schools and (b) evidence about each student's ability to conduct an action research project that connects inquiry to reflective practice and plans for improvement. Brief mention is given to evidence about professional development in schools. These findings set the context for examining evidence about the students' learning experiences.

Professional Development in Local Schools

Professional development was examined as an integral part of the school improvement process. Three aspects of systemic improvement were examined. Was professional development connected to school improvement, continuous from one year to the next, and explicitly focused on teacher and student learning? Each of these three topics of inquiry was scored according to a three point scale: (a) absent; (b) minimal; and (c) developed. An overall global appraisal was then given for each school. In

the global appraisal four types of schools were analyzed and coded, falling along a continuum from Stuck to Systemic: (a) Stuck; (b) Limited Connections; (c) Transitional; and (d) Systemic (Rosenholtz, 1991).

Stuck. This term refers to a school that continues over time with episodic and isolated professional development activities that have minimal connection to teacher and student learning. Professional development is fragmented from other aspects of school structure and educational programs and has an ad hoc and random character.

Limited Connections. This term refers to schools that make some of the essential connections between professional development and school improvement planning. These connections often involve preliminary planning each year to establish topics for improvement for the coming year. Some aspects of professional development are then dedicated to these topics. The pattern starts again the next year with new topics. The connections are there, but there is no systematic linkage. Many of these schools appear to be frozen in this pattern for several years, although they are more developed than the Stuck schools.

Transitional schools. These schools have put several key components in place to develop a systemic framework for school development. Professional development is part of the school improvement agenda, intended to give teachers ongoing, focused learning opportunities. The school has taken essential first steps to become systemic, and the potential for further development appears promising.

Systemic schools. These schools have been working on the integration of professional development and school improvement for several years. Strong leadership is in place for district and school leaders who have forged connections between school improvement planning and a targeted, comprehensive professional development program. Teamwork is fostered among the teachers; resources are allocated to specific improvement projects; results are monitored; systematic evaluation takes place; and continuity is assured from one year to the next. There is an explicit agenda recognized by the entire staff that connects teacher and student learning.

Two investigators coded each of the schools independently according to the four global designations from Stuck to Systemic. In those cases where the coders disagreed, a third person coded the case to resolve the discrepancy. The first two coders established high inter-rater reliability for assigning schools to one of the four categories. Sixty-five cases were coded independently with the coders agreeing on 62 of these cases, establishing an inter-rater reliability of .954.

A study of 56 schools suggests that a clear pattern exists for the level of professional development found in various grade levels (see Table 1). Most of the schools ($n = 30$) are best characterized as having Limited Connections. The second largest group of schools ($n = 16$) is classified as Stuck. The combined number for these two types of schools ($n = 46$) sug-

gests that the vast majority of schools (83%) have failed to develop systematic strategies that connect professional development to a sustained school improvement planning process. Only three elementary schools have institutionalized a systemic approach to professional development and school improvement. Seven schools are working out systematic connections between professional development and school improvement planning. These promising cases are making the transition to systemic development.

Table 1

Level of School Development and Type of School

	Elementary	Middle/Jr. high	High school	Total
Stuck	3	2	11	16
Limited connections	6	9	15	30
Transitional	3	2	2	7
Systemic	4	0	0	3
Total	15	13	28	56

These are sobering findings for school reformers who hope to see a stronger and more robust improvement process of planned change. Findings from this study suggest that faculty in principal preparation programs face a major challenge, because they are working with a majority of principal candidates who have had no experiential knowledge of successful professional development that drives the school improvement agenda. Many principal candidates have had poor professional learning environments to gain the necessary skills and knowledge to make the vital connection between professional development and student achievement. Our data suggest that some of these principal candidates are open to reconsidering their taken-for-granted knowledge about the possibilities of using professional development in more effective ways.

Learning Outcomes for Principal Candidates

Principal candidates in the Seminar on School Development often commented that the field study was more comprehensive and complex than assignments they had in other classes. They informed the professors that it was more work, but the question remains: Did all the work lead to intended learning outcomes? What did the students learn? What are the learning outcomes of this complex task?

We answered these questions by constructing a scale that identifies a continuum of outcomes ranging from minimal, routine learning to exemplary scholarship connecting theory to practice. The 56 projects were analyzed according to intended outcomes: (a) descriptive account of professional development activities, (b) critical analysis of the findings, and

(c) transfer of findings and scholarship to implications for action. Each of these three areas of inquiry were further divided into a series of nine sub-scales. Each scale was coded according to three categories: (a) absent, (b) minimal, and (c) developed.

The student's first task in the action research case study was to provide a thorough and complete description of all professional development activities in the school during the past two years. This required creating an inventory of activities and describing these activities with sufficient detail to allow further analysis of their importance to school-wide goals of improvement, their effectiveness to improve the instructional skills of teachers, and their durability to have any kind of lasting impact. Descriptive accounts also examined the diverse perceptions of professional development offered by district administrators, the principal, and classroom teachers. The reports were coded according to the breadth and depth of information provided.

The second topic examined was the student's ability to provide a critical analysis of the school's professional development program. Analysis involved the ability to understand the complexity of professional development activities that often served different purposes for different stakeholders. Did students recognize and articulate divergent perspectives for such diverse stakeholders as central office administrators, the principal, and veteran and novice teachers? Did the students analyze the many gaps that are found in the statements and actions of educators who talk about professional development and school improvement? For example, there were many accounts of a "say/do" gap. What people said about professional development often seemed at odds with what they were actually doing. Sometimes this issue was examined in terms of the espoused theories of professional development and the theories in action.

The third topic concerned the student's ability to integrate the scholarly literature with findings from the fieldwork. This synthesis of scholarship and empirical evidence was then used as a new framework to better understand the need for systematic changes for the school. Were the graduate students able to connect findings and scholarship to implications for practice? Did the insights from the literature and the findings from the field offer a new awareness for needed improvements in policies and practices related to professional development and systemic school improvement? Principal candidates were expected to be thorough in their description of professional development, critical in their analysis, and finally, thoughtfully practical in their conclusions about needed improvements. The global appraisal identified four kinds of learning outcomes: (a) Pedantic, (b) Passively Informed, (c) Critical Analysis, and (d) Practical Wisdom.

Pedantic. These outcomes represent cases in which the student completes the assignment but with little or no evidence of critical analysis or effective use of the scholarly literature on professional development. These reports were primarily descriptive accounts of various professional

development activities at the school with little commentary. The perceptions of various stakeholders were presented, but no consideration was given to discrepancies in these perceptions. Implications for an improvement agenda were not developed.

Passively Informed. These cases provided complete information about professional development activities and the views of various stakeholders. They also offered some analysis of various types of professional development found in the STPI typology. The reports were well informed about the details of professional development, but the graduate students failed to offer critical reflection on their own findings. In the written reports, students in this group often expressed satisfaction with the current arrangements that provide professional development opportunities to selected teachers who pursue individual interests. Little or no consideration was given to the collective goals of the school and the need to integrate professional development with specific school improvement agendas. Ideas in the literature and findings in the field did not lead to any insights about the need for change at the school. In short, the principal candidates were passive about their own detailed findings.

Critical Analysis. This term refers to reports that were sound works of scholarship and field research. These graduate students got high marks on all of the key indicators of description and critical analysis. They had rich data, clear understanding of the literature, and critical insight into the problems of professional development facing their school. While they had sound grasps of the scholarly literature and findings from the field, they failed to develop specific recommendations for action. Their concluding thoughts were often insightful, but implications for new directions at schools were not developed. Any suggestions for improving the professional development program were vague and inconclusive.

Practical Wisdom. This term refers to students who shared all the attributes elaborated above for Critical Analysis, but they extended this analysis to develop a constructive agenda for improvement. There was a clear line of reasoning in these reports, as graduate students articulated the connection between ideas in the literature and the empirical evidence about existing conditions in their schools. This new understanding was used to take the next logical step to recommend appropriate improvements in the professional development program. We have coined an acronym for this thinking process. The graduate students make the “FLIP to Action”—Findings/scholarship are Linked to Implications for Practice. FLIP is a student-friendly term for Practical Wisdom, because these principal candidates moved beyond Critical Analysis to the next step in their chosen profession: Translating the wisdom of scholarship to the practical needs of improving schools.

Two investigators coded the 65 projects independently to assign student performance to one of the four categories, Pedantic through Prac-

tical Wisdom. Any cases of discrepancy between the first two coders were resolved with a third coder who was asked to resolve the initial differences of judgment. The first two coders had a high level of inter-rater reliability in their designation of learning outcomes by establishing similar ratings for 60 cases. This established an inter-rater reliability of .923.

Table 2 presents the range of learning outcomes for the principal candidates according to three levels of schooling (elementary, middle school, high school) where they currently teach and conducted their field studies. Table 2 suggests that the distribution patterns for learning outcomes for principal candidates from various kinds of schools were relatively similar. The findings were encouraging and challenging. Approximately one third of the graduate students submitted case studies that are Pedantic ($n = 9$) or Passively Informed ($n = 12$), but the other two thirds achieved higher levels of Critical Analysis ($n = 28$) and Practical Wisdom ($n = 16$). The contrast between high school and elementary school educators was also worth noting. High school teachers seemed to be a bit more pedantic and critical. In contrast, the elementary teacher was more inclined to practical wisdom. These are minor findings when compared to the larger issues suggested in Table 2. Most graduate students learned to be critical thinkers as they examined policies and practices of professional development in their schools. While most learned to be critical, it was more difficult to help them gain the needed practical wisdom which is so essential for principal candidates in the 21st century.

Table 2
Types of Schools and Learning Outcomes for Principal Candidates

	Elementary	Middle/Jr. high	High school	Total
Pendantic	1	3	5	9
Passively informed	3	3	6	12
Critical analysis	4	5	17	28
Practical wisdom	4	5	5	16
Total	16	16	33	65

Throughout the seminar the professors were continually raising the “So what?” question. Repeated efforts were made to connect theory and empirical research to practice. Each week time was dedicated to heated discussions about the implications of scholarship to the urgent need for practical solutions to school problems. Many students understood these implications and wrote solid reports of Practical Wisdom. Many others were critical of their schools, but they were unable to take the next step which is so essential to educational leadership. And then there was still another group. These students successfully completed the routines of fulfilling classroom assignments, but they remained comfortably contented in the status quo

world of current practices in schools seemingly destined for an undisturbed mediocrity even in the face of escalating calls for improvement.

Findings reported in Table 1 and Table 2 indicated wide variation in the development of schools and the learning outcomes of graduate students. The next question to be asked concerns the relationship between these two aspects of the action research projects. Was there any relationship between the level of school development and the kind of report written by the student? Did graduate students from Stuck and Limited Connections schools respond differently in their case study reports than those students from Transitional and Systemic schools? Were students from Stuck schools more likely to write critical reports about the conditions they discovered in their investigation? Were students from the more advanced schools (Transitional and Systemic) less critical and more likely to write Passively Informed reports? The answers to these questions are found in Table 3.

Table 3

Level of School Development and Learning Outcomes

	Learning outcome				Total
	Pedantic	Passively informed	Critical analysis	Practical wisdom	
Stuck	3	4	8	3	18
Partial system	5	6	16	9	36
Transitional	1	2	3	2	8
Systemic	0	0	1	2	3
Total	9	12	28	16	65

A cross tabulation of the four levels of school development and the four levels of learning outcomes suggested that there was little or no relationship between these two aspects of the case study reports. Students from three of the four types of schools (Stuck, Partial System, and Transitional) had distribution patterns that were similar. In each of the three types of schools, there was a wide distribution of reports that ranged from Pedantic to Practical Wisdom. In each case the modal point was Critical Analysis.

The findings in Table 3 suggested that the student's ability to carry out the demands of the action research project was not related to the conditions found in the local school. These findings were significant for the instructors in the Seminar on Organizational Development. Students from Stuck schools were not handicapped when compared with peers from Transitional and Systemic schools and not prevented from achieving Practical Wisdom. The action research assignment was adaptive to principal candidates from all kinds of schools.

Table 3 presents a wide range of learning outcomes in the three kinds of schools: Stuck, Limited Connections, and Transitional. It is important to note that most student projects for these three levels of school development were characterized as Critical Analysis and Practical Wisdom. The three projects from Systemic schools were also characterized as Critical Analysis and Practical Wisdom. A closer examination of some of the projects provided a deeper understanding of the students' struggles to make sense out of the bewildering world of professional development and school improvement planning these principal candidates encountered in their field studies.

Student Learning Experiences in Different School Settings

The fieldwork assignment required students to describe and analyze their local school setting in all of its complexity. We report briefly on some of the crucial issues students discovered in their investigation and their subsequent efforts to interpret their findings in a meaningful way.

In the extreme case of Stuck schools, the graduate students often faced a bleak world of minimal resources and a legacy of episodic and unfocused professional development activities. These are case studies of thin budgets and inconsequential results. In recent years some Stuck schools were suddenly eligible for remediation grants generated by external agencies administering No Child Left Behind funds. Local educators often seem confused about how to spend this money effectively on such short notice. One graduate student reflected on these circumstances.

It all seems strange to me. Students continue to score poorly on tests. Teachers are tired of being told they are not doing a good enough job. Tax payers are pouring more money into schools for school improvement activities, only to have the outcome as bleak as it was two years ago. The state continues to have teachers attend workshops in order to collect their Continuing Professional Development Units, and yet we are finding that those workshops the teachers attend are lacking when it comes to benefiting student learning. The whole system of reform saddens me.

This student wrote a Passively Informed report of a Stuck school, and the assignment was troubling to her. She is a high school teacher in mid-career who discovered many aspects of her school she had never considered before. The experience was enlightening, but it was also overwhelming. In the end, the student was unable to go beyond the sadness she felt about the recent frenzied professional development activities generated by anxious energy. She was unable to envision practical steps that might be taken to use professional development as a tool for improvement.

Another high school teacher at a Stuck school faced similar circumstances of fragmented and incoherent professional development activities. Yet the seminar assignment led to a learning experience and a distinctly different outlook for her. She summarized her school situation in

the following terms: "Professional development activities can be characterized as haphazard as they are pasted together by a variety of providers on a wide range of topics, many of which do not address the goals of the School Improvement Plan or the Technology Plan." In her conversations with staff and colleagues she came to recognize the need for bold changes. "I do not think you can have systemic change by continuing this haphazard approach." She recommended a new school improvement planning process that is grounded in accountability and leadership in the departments. Each department would be expected "to develop, implement, and assess content driven strategies to improve student achievement." Her report spelled out the key features of systemic school improvement and the significance of professional development as an ongoing system of sustained accountability and professional growth.

The largest number of case studies were designated as Limited Connections that were written as Critical Analysis ($n = 16$). Most of these schools were found in school districts that had expended considerable resources during the past two decades training teachers in the latest popular instructional innovations. Conversations about professional development in these schools often had a cynical tone as veteran teachers spoke about professional development activities as the "flavor of the year." It seems the districts were always starting new initiatives. But one graduate student noted, "Many of the school's professional development initiatives are unrelated and unconnected." The field studies also reported the wide array of opportunities for professional development that modestly affluent districts could provide for their teachers. But many principal candidates concluded that these resources were not being spent wisely. The major problem is not resources; rather, it is lack of coherence and the failure of leadership at both the district and the school level. The conclusions of many of the reports call attention to these problems. To quote one such report, "Leadership and additional steps of courage will need to be taken by all who are concerned about developing professionally and improving student learning." These graduate students had some fresh insights about the complexities of professional development and school improvement, but they were unable to move the agenda to practical steps for an improved system. Unfortunately, "steps of courage" may be necessary, but they are not sufficient.

In Transitional schools, there was a different understanding about current problems and appropriate next steps for improvement. In these schools, investigators identified new breakthroughs that showed promise for improvement as well as old habits that prevent the schools from taking a more systemic approach to school improvement. Sometimes graduate students came to see themselves as part of the problem with prior attitudes and behavior. They reported enjoying the benefits of "sit and get" sessions for salary gain while simultaneously complaining that they were a waste of time. In Transitional schools the principal candidates were more cognizant of the need to articulate broader collective commitments to advance student

learning. They often interviewed school leaders who were taking important steps to assure stronger connections between professional development and the student learning agenda. The graduate students wrote about the movement away from professional development activities that benefit individual teachers and toward activities that are embedded and ongoing among teacher colleagues. It is a case of recognizing barriers as well as breakthroughs. One graduate student captured this transition from the old to the new in the following terms, "Through this class I have definitely had my eyes opened to how ineffective we as a staff have been with our professional development and how effective we could be in the very near future."

In the Systemic schools, the graduate students came to appreciate how many of the key components of systemic school improvement had helped their school evolve over the years as a successful educational program. These principal candidates were not complacent about their school's achievements. To the contrary, these schools often served low income students, and the principal candidates recognized the challenges facing their schools. They also understood that professional development and school improvement are both long term commitments that must be renewed each year.

I was encouraged by the results of the interviews. I do see that there is room for improvement by clearly communicating this vision to classroom teachers. However, based on the interviews, I saw that all parties see a tremendous value in professional development. Administrators and teachers understand that student achievement is based on the quality of good teaching. As long as our district and building maintain this attitude and persevere, the professional development at [our school] will become progressively more effective for student learning.

The findings reported in the three tables fail to present other important aspects of the students' project reports worth noting. Perhaps the most important additional finding to mention is the extraordinary complexity of the school context and the leadership dynamics that make any assumptions about linear changes for improvement seem naïve. Those students who wrote some of the best papers understood this complexity, and in Donald Schön's (1983) terms, they demonstrated "artistry" in their capacity to comprehend local conditions and the need to work out solutions that fit the situation. The Action Research Project on Professional Development is a problem solving project that requires new skills in collecting data, asking appropriate questions, and then studying the context to determine the next steps that best fit the situation at hand. There are no context free formulas on how to best connect school improvement planning to a professional development agenda.

Implications for Principal Preparation Programs

The Action Research Project on Professional Development provided principal candidates with the opportunity to rehearse the leadership

tasks they will face in coming years. On the job as principals, they will coordinate school improvement planning and professional development activities with a broader agenda of sustained school improvement. What are the implications of this work for principal preparation programs? What would preparation programs need to do to implement the action research pedagogy? Four implications are derived.

First, graduate students were given an authentic assignment in instructional leadership. They were asked to examine their schools critically and constructively: as a complex appraisal of current conditions and an opportunity to consider prospects for developing new directions for systemic improvement. The assignment combined rigor and relevance by requiring thoughtful reflection on scholarly literature and local findings from documents and interviews. Many of the project's steps of inquiry and reflection mirror the processes of critical thinking and action that are found in the leadership tasks of the principal:

- be well informed about recent developments in the professional literature
- take stock with an inventory of the many professional development activities found in the school in recent years
- consult with teachers and administrators about these activities in terms of their effectiveness (or ineffectiveness)
- after a critical review of the findings, explore key local issues in the relationship between professional development activities and school improvement planning
- use these reflections to design new opportunities to connect professional development to systemic school improvement for improved student achievement. In short, the action research project is a brief apprenticeship for aspiring instructional leaders

The second implication for principal preparation programs is, as Shulman would point out, the action research as organized is a fundamental way in which future practitioners are to be educated for their new profession. In this study, the candidates were instructed in the critical aspects of the three dimensions of professional work: to think—that is, to review the literature about professional development and school improvement; to perform—by conducting the various aspects of the action research process; and to act with integrity—by writing up what they experienced and looking at the reality of the situations they found. Many went further when they expressed implications for improvement. With these features, the action research project meets Shulman's test of a signature pedagogy. Preparation programs can benefit from this type of learning for their candidates. It is adaptive and easily affordable for all preparation programs.

The third implication for preparation programs is that there should be essential elements for the action research pedagogy. Six elements would include:

1. Taking the case of one school as a complex, interactive system
2. Participating in action research with the engagement of local educators and student peers
3. Investigating a real school problem or issue and taking it beyond the taken-for-granted routines of the school
4. Gathering credible evidence/data that can be applied to the problem solving task
5. Providing formative and summative instructions that guide the candidates through initial inquiry through analysis and recommendations for action
6. Generating assessment tools that contain valid and reliable criteria to inform the candidates, faculty, and the program

Following a protocol like this one, preparation programs would be able to provide evidence of student learning at three levels—students, faculty, and program review—instead of the common, one dimensional approach which assesses student work for a grade but yields little understanding even as the student advances through the program and into the field.

Finally, the last implication for preparation programs is to continue to develop methods and pedagogies to identify what students really do know and are able to do and as a result to advance the preparedness of the candidates they graduate. If preparation programs are going to produce quality candidates for school leadership, they must be able to identify and move the Pedantic and Passively Informed candidates to Critical Awareness and Practical Wisdom. Programs must continue to develop valid and reliable methods that assess candidates in meaningful ways for the benefit of the candidates themselves, for the faculty, for the improvement of teaching, and for the preparation program for improvement of the program.

Conclusion

Initially we posed the question, “how do we know if students have truly learned what is taught, and what is it that they can do with that knowledge?” We offer one answer to this question by providing a rationale and learning results for an action research project that can serve as a signature pedagogy in principal preparation programs. We support Fullan’s (2009) assertion that in this era of unrelenting demands to build better schools, attention must be given to teaching-learning strategies of “job embedded school leadership development” (p. 45). We have wrapped the action research project around a set of tasks that focus directly on improving the school. In Fullan’s (2009) terms, we created “a theoretically rich and prac-

tice-sensitive curriculum linking theory to practice” (p. 46). Our study suggests that aspiring principals are facing major leadership challenges as they attempt to develop organizational strategies that marry successfully the school improvement planning process to the professional development program. No leadership work matters more, because this marriage offers promise of increasing student achievement. Helping principal candidates to make the vital connection between school improvement planning and professional development is at the heart of a signature pedagogy for principal preparation programs in the 21st century.

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